radiography

INSTRUCTIONS FOR USE

BuckyDiagnost

Bucky unit

Release 5

English

4512 109 26441 AA/704 – 10.2003

PHILIPS

Internet adress: http://
www.philips.com/ms

Copyright

This manual is a translation from the German.

1 Facts Worth Knowing

1.1 For your guidance 5
1.2 Version 5
1.3 For safe operation 5
1.4 Conformity 6
1.5 Training 6

2 Safety

2.1 About this manual 7
2.2 Electrical safety 7
2.3 Mechanical safety 7
2.4 Electromagnetic compatibility (EMC) 7
2.5 Radiation protection 8
2.6 Disposal 9

3 The fast way to make good exposures

3.1 Flowchart 10

4 Optimus generators

4.1 Optimus 30/50/65/80 12
4.2 Optimus 30 (one phase generator) 18

5 The control grip

5.1 – for BuckyDiagnost CS
– for BuckyDiagnost FS 22
5.2 – for BuckyDiagnost CS
– for BuckyDiagnost FS
– for BuckyDiagnost Trauma II 24

6 BuckyDiagnost TH2

6.1 Legend 26

7 BuckyDiagnost TF

7.1 Legend 27

8 BuckyDiagnost Trauma II

8.1 Legend 28

9 BuckyDiagnost FS

9.1 Legend 29

10 BuckyDiagnost VE/VT

10.1 Legend 30

11 BuckyDiagnost CS

11.1 Legend 32

12 The cassette trays

12.1 Automatic cassette tray ACL4 33
12.2 Manual cassette tray 35

13 Appendix

13.1 If something doesn´t work … 36
13.2 Messages 37

1 Facts Worth Knowing

1.1 For your guidance

BuckyDiagnost is the name of the Bucky systems from Philips, comprising the components of the BuckyDiagnost family.

These Abridged Instructions for Use are designed to make it easier for you to find your way around the BuckyDiagnost X-ray system. You must still read the Instructions for Use for the various system components.

In this abridged manual you will find

- safety instructions
- a flow diagram for operation
- legends of all system components
- assistance in the event of a malfunction

1.2 Version

This version of the Instructions for Use corresponds to the latest version of the X-ray equipment at the time of going to press.

This X-ray equipment is available in various configurations. These Instructions for Use describe the largest possible configuration. It is therefore possible that functions (indicated as optional) are described which do not form part of your unit.

1.3 For safe operation

- If the user wishes to connect the X-ray equipment to other equipment, components or assemblies and if it is not apparent from the technical data whether it can be safely combined with such equipment, components or assemblies, the user must ensure that the safety of the patient, operating staff and the environment is not affected by the planned combination by consulting the manufacturers involved or by making enquiries from an expert.
- Philips is responsible for the safety features of its products only if maintenance, repairs and modifications have been performed by Philips or by persons explicitly authorised to do so by Philips.
- As with any technical appliance, this equipment requires not only correct operation but also regular, competent maintenance and care.
- If you operate the X-ray equipment incorrectly or if the user fails to have maintenance carried out properly, Philips cannot be held liable for any malfunctions, damage or injuries.
- Safety circuits must be neither removed nor modified.
- You may remove or open parts of the housing only if you are instructed to do so in this manual.

Philips Medical Systems 5 Nov. 2003

1.4 Conformity

This Medical Device meets the provisions of the Medical Device Directive MDD 93/42 EEC (93).
If you have further questions regarding the applicable national or international standards, please address them to:

Philips Medical Systems DMC GmbH
Quality Assurance Department
Roentgenstrasse 24
D-22335 Hamburg
Fax: (+49) 40/5078-2147

1.5 Training

The X-ray equipment may only be operated by persons who have the necessary expertise in radiation protection or knowledge of radiation protection and who have been instructed in how to operate the X-ray equipment.

2 Safety

2.1 About this manual

This manual is intended to enable you to work safely with the X-ray equipment described. You may only use this equipment in compliance with the safety instructions in this manual and not for purposes other than those for which it is intended.

It is always the user who is responsible for complying with the regulations which apply to the setting up and operation of X-ray equipment.

For further information refer to the Instructions for Use for the different components.

2.2 Electrical safety

This X-ray equipment meets the safety class I and type B according to IEC 60601-1.

Only trained maintenance staff may remove the covers from the high-voltage cable of the X-ray tube assembly and the high-voltage generator.

This X-ray equipment may only be operated in medical rooms which meet IEC requirements.

- ***You must never operate this X-ray equipment in areas where there is a risk of explosion.***
- ***Detergents and disinfectants, including those used on patients, may create explosive mixtures of gases. Please observe the relevant regulations.***

2.3 Mechanical safety

- ***Please ensure that neither the patient nor yourself allows hands to enter the radius of movement of the X-ray equipment and that no parts of clothing are caught by it.***
- ***Remove all objects from the radius of movement of the X-ray equipment.***

2.4 Electromagnetic compatibility (EMC)

In accordance with its intended use, this electronic apparatus complies with the law governing EMC, which defines the permitted emission levels from electronic equipment and its required immunity against electromagnetic fields.

Nevertheless, it is not possible to exclude with absolute certainty the possibility that radio signals from high-frequency transmitters, e.g. mobile phones or similar mobile radio equipment, which themselves conform to the EMC regulations, may influence the proper functioning of electromedical apparatus if such equipment is operated in close proximity and with relatively high transmitting power. Therefore, operation of such radio equipment in the immediate vicinity of electronically controlled medical apparatus should be avoided to eliminate any risk of interference.

Explanation:
Electronic apparatus that satisfies the EMC requirements is designed so that under normal conditions there is no risk of malfunction caused by electromagnetic interference. However, in the case of radio signals from high-frequency transmitters with a relatively high transmitting power, the risk of electromagnetic incompatibility when operated in close proximity to electronic apparatus cannot be totally ruled out.

In unusual circumstances unintended functions of the apparatus could be initiated, possibly giving rise to undesirable risks for the patient or user.

For this reason, all kinds of transmission with mobile radio equipment should be avoided. This also applies when the apparatus is in ”standby“ mode.
Mobile telephones must be **switched off** in designated problem zones.

2.5 Radiation protection

- ***Ensure that before performing any radiography all the necessary radiation precautions have been taken.***
- ***Personnel in the examination room must comply with the valid radiation protection regulations when using X-rays. Please comply with the following rules:***
- ***To protect the patient against radiation always use radiation protection accessories in addition to devices which are fitted to the X-ray equipment (e.g. diaphragm, spacer, filter).***
- ***Wear protective clothing. Radiation protection aprons with a lead equivalent of 0.35 mm attenuate X-radiation at 50 kV by 99.84%, and at 100 kV by 91.2%.***
- ***Distance is the most effective radiation protection. Keep as large a distance as possible away from the object exposed and the X-ray tube assembly. Scattered radiation is largely dependent on the volume of the object being exposed.***
- ***Wear a personal dosemeter. Philips recommends determining the personal dose occurring at the workplace under practical conditions and, where required, laying down any necessary radiation precautions, specifying the use of bar and/or fingerring dosemeters in addition.***
- ***Always select a focal spot to skin distance as long as possible to keep the absorbed dose for the patient as low as could reasonably be possible.***

- ***Always be aware that any material brought into the path of radiation between the patient and the image receptor (e.g. film) will have a negative influence on the image quality as well as on the patient dose.***
- ***Always make sure that acoustic and visual communication between operator and patient is guaranteed also during exposure. If necessary, communication must be established with technical means, for instance, an intercom.***
- ***Safety circuits which may prevent X-radiation from being switched on under certain conditions may be neither removed nor modified.***

2.6 Disposal

Philips manufactures state-of-the-art X-ray equipment in terms of safety and environmental protection. Assuming no parts of the system housing are opened and assuming the system is used properly there are no risks to persons or the environment.

To comply with regulations it is necessary to use materials which may be harmful to the environment and therefore have to be disposed of in a proper manner.

For this reason you must not dispose of the X-ray equipment together with industrial or domestic waste.

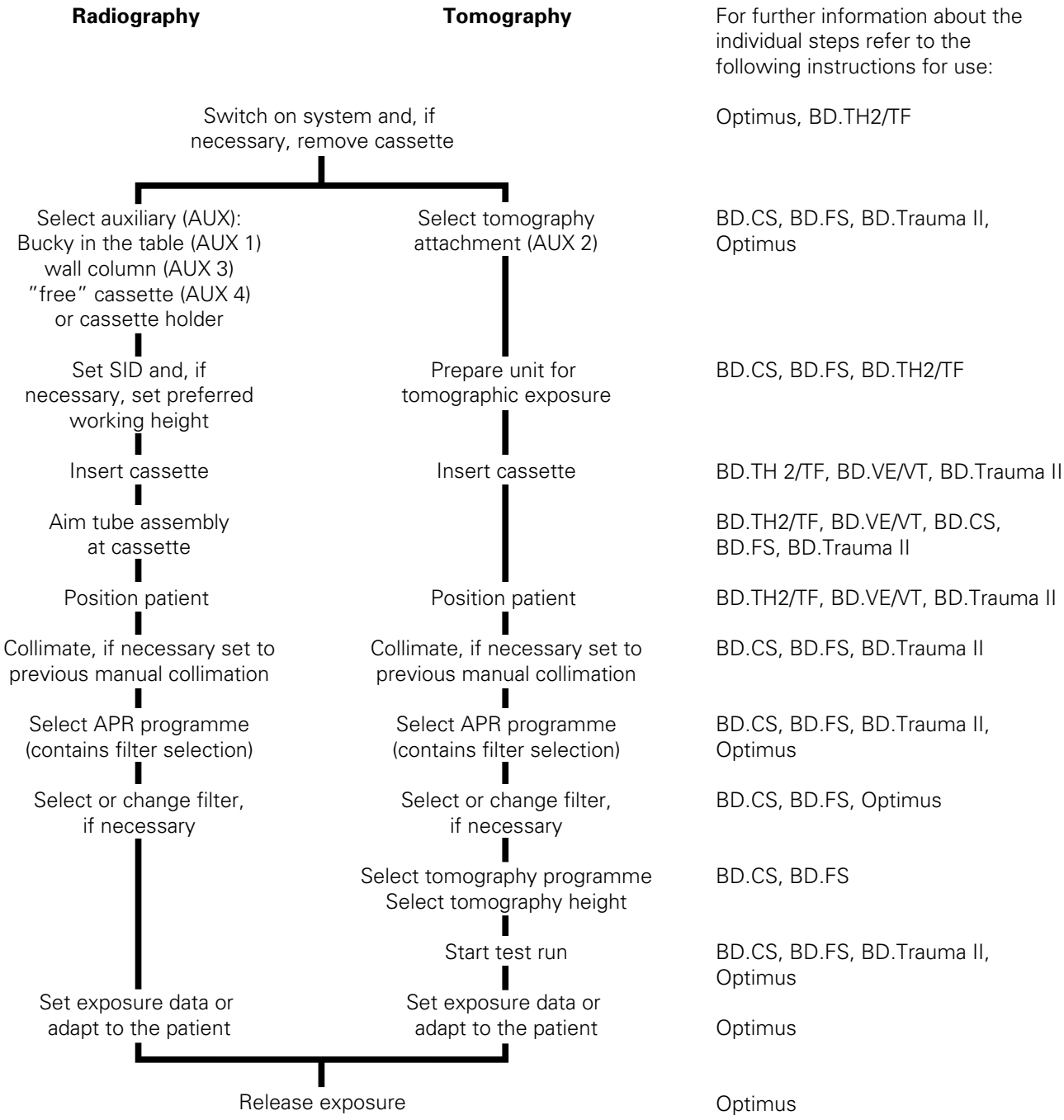
Philips
- supports you in disposing of the X-ray equipment described in a proper manner
- returns reusable parts to the production cycle via certified disposal companies and
- thus helps to reduce environmental pollution.

Consequently, do contact your Philips Service Organisation in full confidence.

Philips Medical Systems 5 Nov. 2003

3 The fast way to make good exposures

3.1 Flowchart

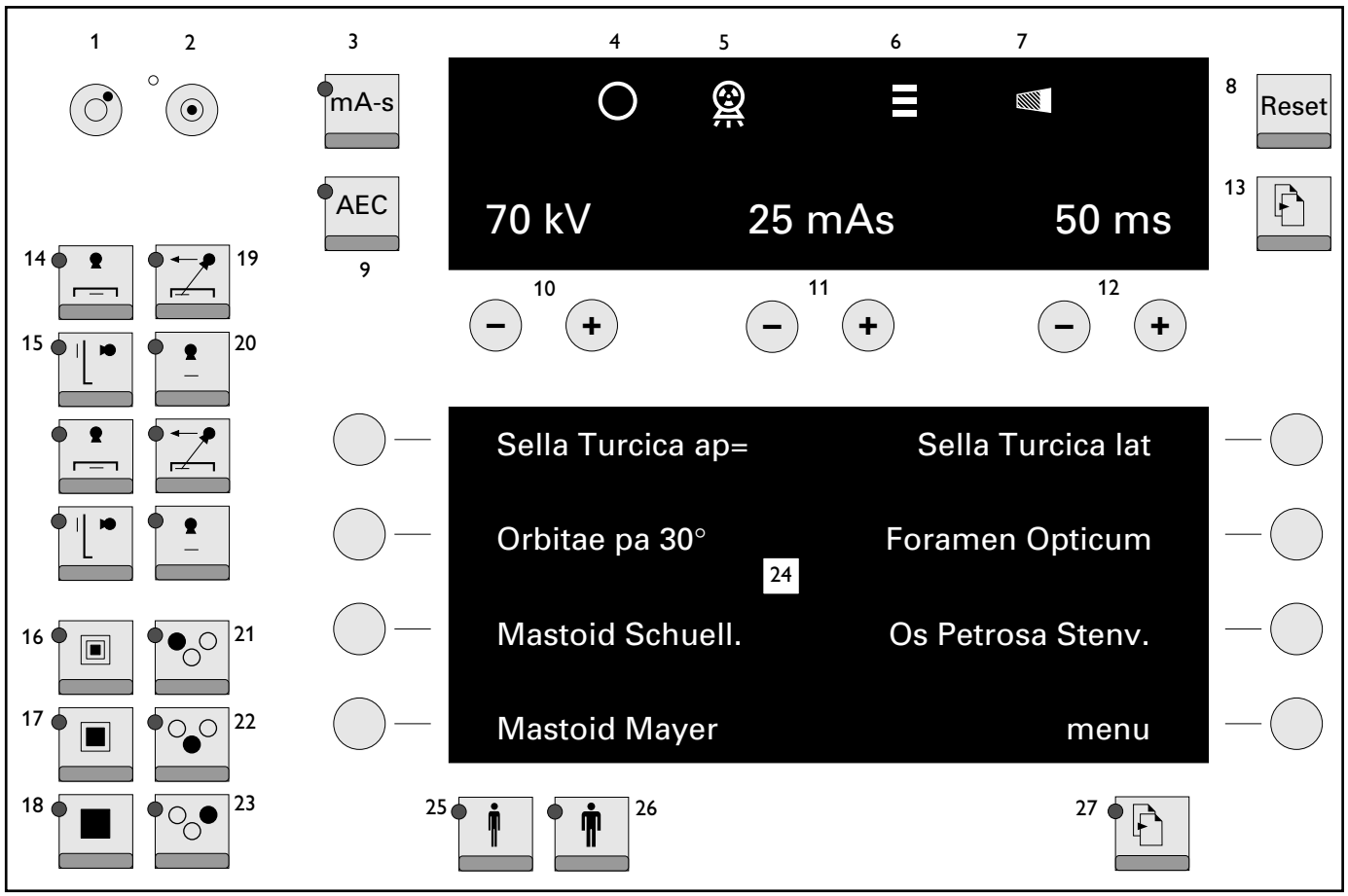


Abbreviations/versions

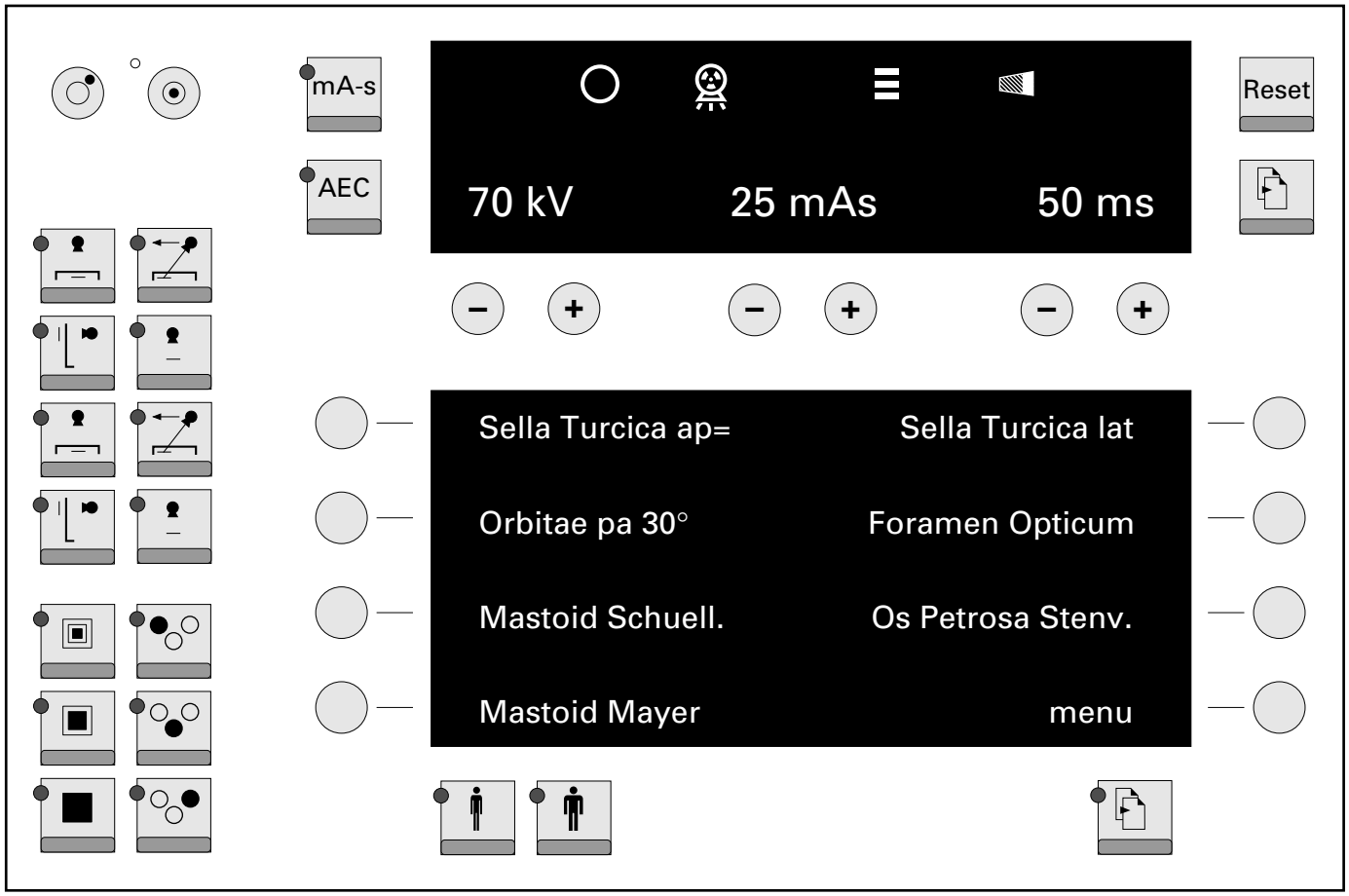
Optimus:	1 phase – 30 kW 3 phases – 30/50/65/80 kW
BD.CS:	BD.CS 2/BD.CS 4
BD.FS:	BD.FS S/BD.FS C/BD.FS F
BD.TH2/TF:	BD.TH2/BDTF
BD.VE/VT:	BD.VE/BD. VT

4 Optimus generators

4.1 Optimus 30/50/65/80



No.	Description
1	Switch off generator
2	Switch on generator
3	Select exposure technique
4	Ready for exposure
5	Radiation is switched on
6	Display of tube assembly state
7	Incorrect exposure indicator
8	Reset functions
9	Switch automatic exposure control on/off
10	Display and selection of exposure voltage
11	Display and selection of exposure current or exposure current-time-product
12	Display and selection of exposure time
13	Call up different levels on the display
14	Auxiliary Bucky in the table
15	Auxiliary wall column
16	Small focal spot
17	Medium focal spot
18	Large focal spot
19	Auxiliary tomography
20	Auxiliary "free" cassette
21-23	Select measuring fields of the automatic exposure control
24	Display
25	Slim patient
26	Stout patient
27	Scroll through the pages of the display



Upper part of the display

Display and selection of the generator data.

Green Ready lamp: ready to make an exposure

Radiation is switched on

Display of tube assembly state
(depending on system and tube assembly, please also observe the instructions in the instructions for use for the X-ray tube assembly).

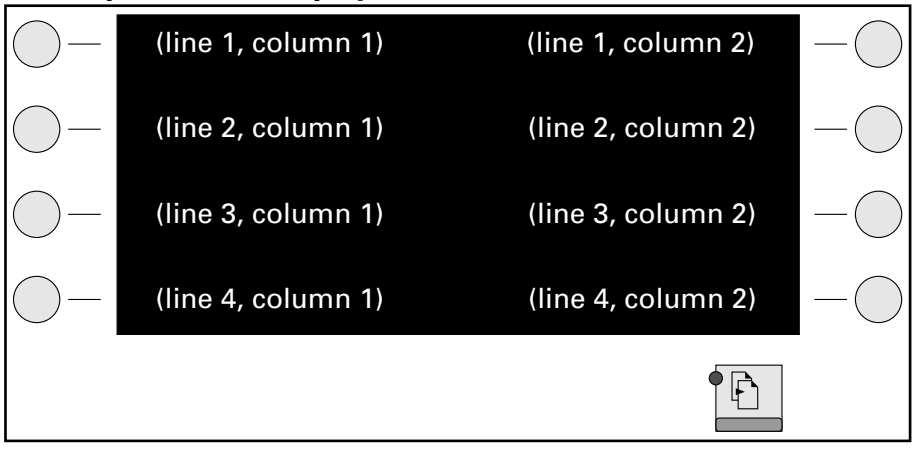
Colour(s)	Description
green	Full power available
yellow + green	The tube assembly is warm, full power is available
yellow	Up to 80% of full power is available
yellow + red	Up to 64% of full power is available
red	The thermal safety switch in the tube assembly is activated – radiography not possible – fluoroscopy current is limited to 3 mA

Incorrect exposure indicator; if it flashes,
- you have let go of the exposure switch prematurely; press Reset

or
- the limit of exposure time or mAs has been reached; press Reset

or
- the exposure has been aborted owing to incorrect exposure (incorrect exposure early warning system), press Reset .

Lower part of the display



Display and selection of APR programmes;
the APR programme selected appears highlighted.
If there is an APR menu, "menu" appears on line 4, column 2. You can call it up with the button .

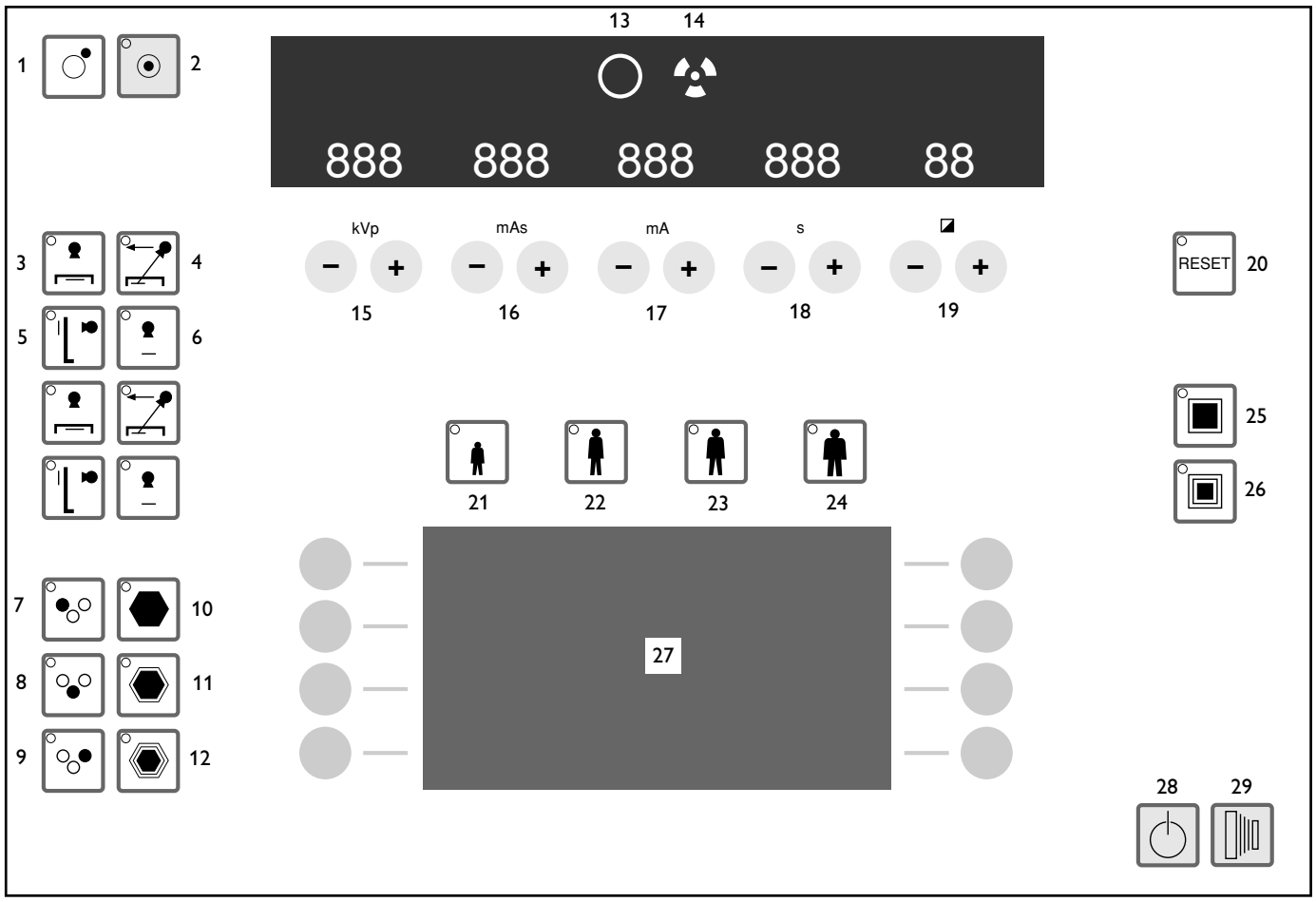
With you can scroll through the pages if the LED is lit and at least two pages have been programmed. After the last page, page 1 appears again.

If, after scrolling, you press the exposure switch on "Preparation" the following appear:
- the APR programme last selected
- the appropriate exposure data.

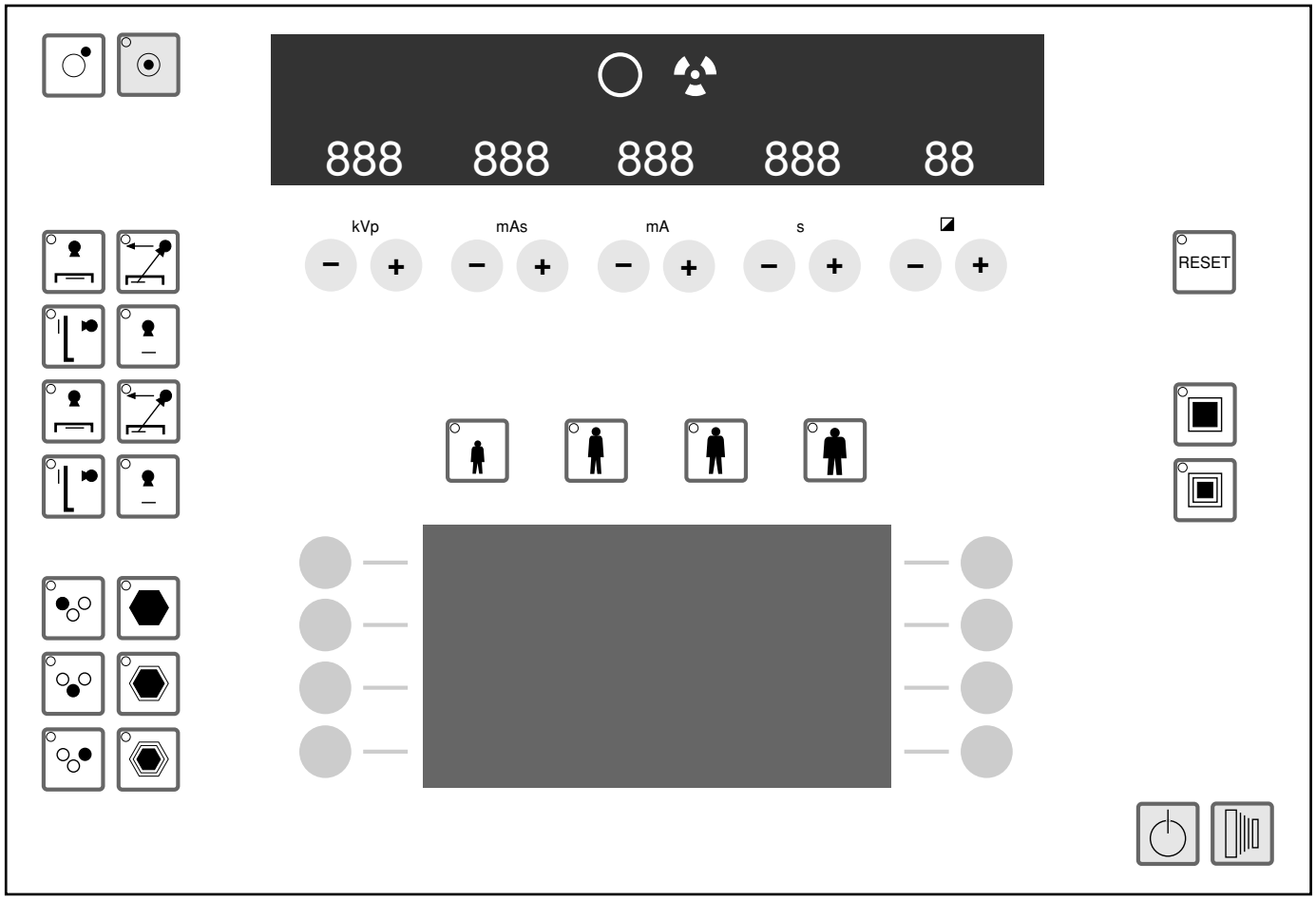
If you have modified the data of a programme, an asterisk appears after the name of the programme. The modified data remain intact (even if you change the auxiliary for example) until you select the same programme again or a different one.

For further information refer to the Instructions for Use for the generator Optimus 30/50/65/80.

4.2 Optimus 30 (one phase generator)



No.	Description
1	Switch off generator
2	Switch on generator
3	Auxiliary Bucky
4	Auxiliary tomography
5	Auxiliary wall column
6	”Free“ cassette
7-9	Select measuring fields of the automatic exposure control
10-12	Film screen sensitivity
13	Ready for exposure
14	Radiation is switched on
15	Display and selection of exposure voltage
16	Display and selection of mAs
17	Display and selection of exposure current
18	Display and selection of exposure time
19	Display and selection of density correction
20	Reset functions
21	Child
22	Slim patient
23	Normal patient
24	stout patient
25	Large focal spot
26	Small focal spot
27	APR display
28	Prepare exposure
29	Release exposure


888 888 888 888 88
kVp
mAs
mA
s
RESET

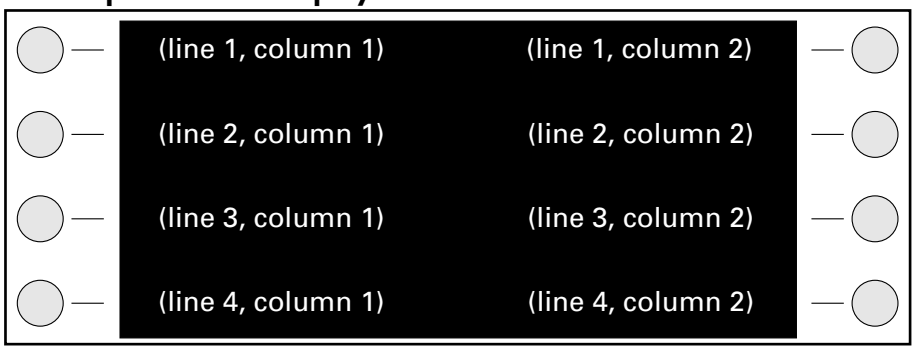
Upper part of the display

Display and selection of the generator data.

Green Ready lamp: ready to make an exposure

Radiation is switched on

Lower part of the display



Display and selection of APR programmes;
the APR programme selected appears highlighted.
If there is an APR menu, "menu" appears on line 4, column 2. You can call it up with the button .

If, after scrolling, you press the exposure switch on "Preparation" the following appear:

- the APR programme last selected
- the appropriate exposure data.

If you have modified the data of a programme, an asterisk appears after the name of the programme. The modified data remain intact (even if you change the auxiliary for example) until you select the same programme again or a different one.

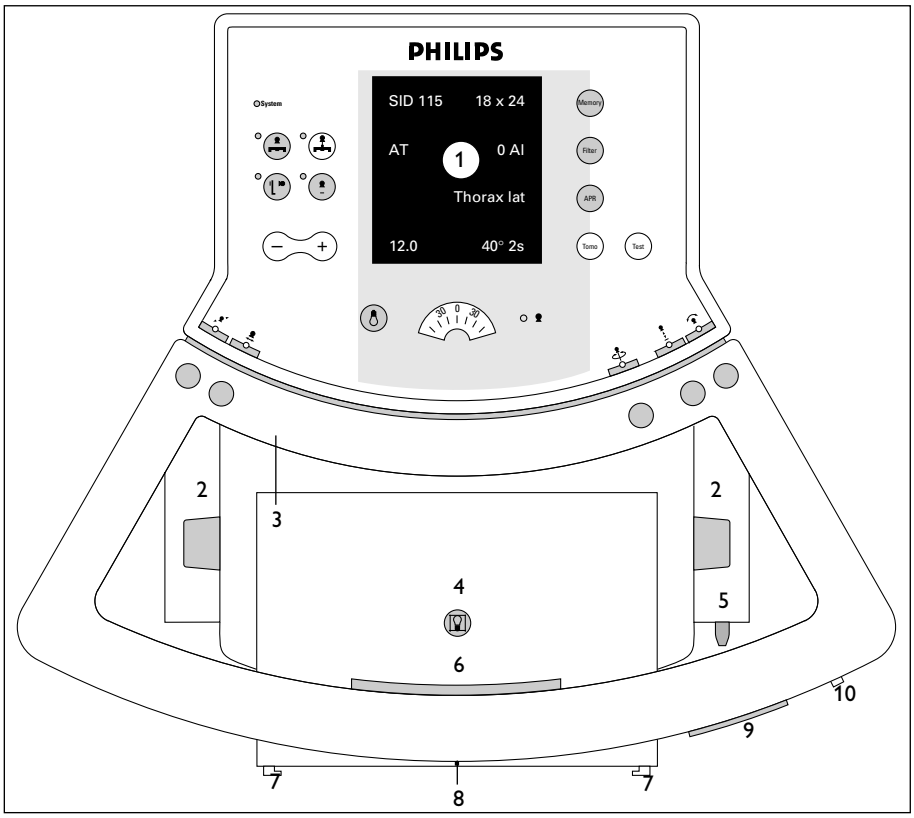
For further information refer to the Instructions for Use for the generator Optimus 30.

Philips Medical Systems 5 Nov. 2003

5 The control grip

5.1 – for BuckyDiagnost CS
– for BuckyDiagnost FS

With automatic collimator

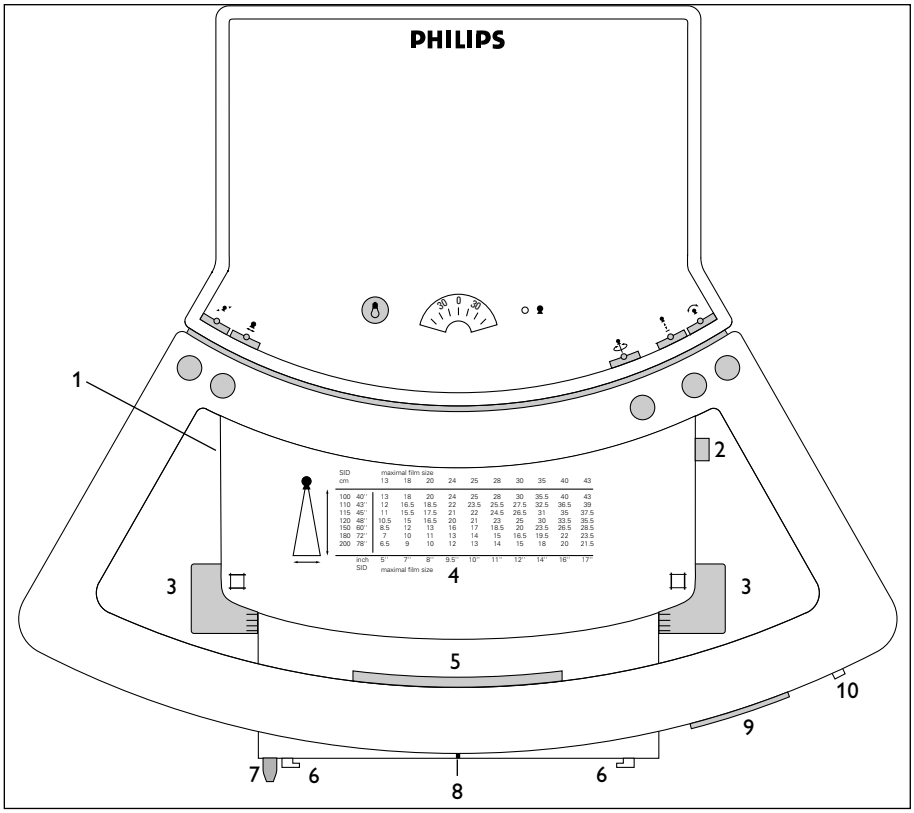


No.	Description
1	Display panel
2	Knobs (right/left) for setting the collimator
3	Key-operated switch (not in view)
4	Switch on light beam lamp
5	Tape measure for measuring SID (source-image distance)
6	Button for enabling – longitudinal tube assembly movement and – transverse tube assembly movement and – raising/lowering tube assembly
7	Rails for accessories
8	Central laser
9	Slider for covering the SID laser and the central laser
10	SID laser (flashing, optional)

Key/display	Description
○ System	Ready for exposure
○ 	Tube assembly selected
	Bucky (AUX 1)
	Tomography unit (AUX 2)
	Wall Bucky (AUX 3)
	”Free” cassette (AUX 4)
	Decrease/increase tomographic height (from table top)
SID 115	SID in cm; the Service Organisation can set inch.
18 x 24	Radiation area in cm; the Service Organisation can set inch
AN	Mode display
0 Al	Added filter
Thorax lat	APR program
12.0	Tomographic height in cm
40° 2s	Tomographic angle, Tomographic time
Restricted use 	Operation with key-operated switch
	Collimator – set to the last value set manually (e.g. after cassette change) – set to full size
	– Select added filter in the radiation beam or – Change the value preset by the APR programme
	Select APR programme (4 per auxiliary)
	Select tomographic programme (angle, time)
	– Start test run for tomographic exposure (without radiation) – Call up help text if no ready for exposure is displayed
	Switch on light field indicator and light pointer (they switch off automatically; the SID laser lights at ”free“ cassette too)
	Indication of angle when tube assembly is rotated
	Enable transverse tube assembly movement (blue)
	Enable longitudinal tube assembly movement (green)
	Enable rotation of the tube assembly round the column (violet)
	Enable vertical tube assembly movement (yellow)
	Enable tube assembly swivel round its transverse axis (black)

5.2 – for BuckyDiagnost CS
– for BuckyDiagnost FS
– for BuckyDiagnost Trauma II

With manual collimator



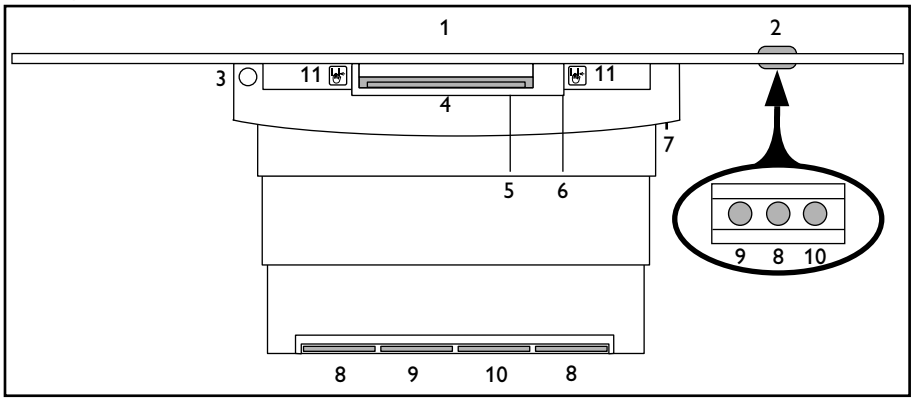
No.	Description
1	Rotating disk for added filters
2	Switch light field indicator ON
3	Knobs for setting the collimator
4	Settings table
5	Enable button for – moving the tube assembly longitudinally and – moving the tube assembly transversally and – raising/lowering the tube assembly
6	Accessory rails
7	Tape measure for measuring SID (source-image distance)
8	Slit for the central laser
9	Slider for covering the SID laser and the central laser
10	SID laser (flashing, option)

Philips Medical Systems

Key/display	Description
	Switch light field indicator and both laser ON (switches off automatically); SID laser is even lit at ”free“ cassette
	Indication of angle when tube assembly is rotated
	Tube assembly selected
	Enable transverse tube assembly movement (blue)
	Enable longitudinal tube assembly movement (green)
	Enable rotation of the tube assembly round the column (violet)
	Enable vertical tube assembly movement (yellow)
	Enable tube assembly swivel round its transverse axis (black)

6 BuckyDiagnost TH2

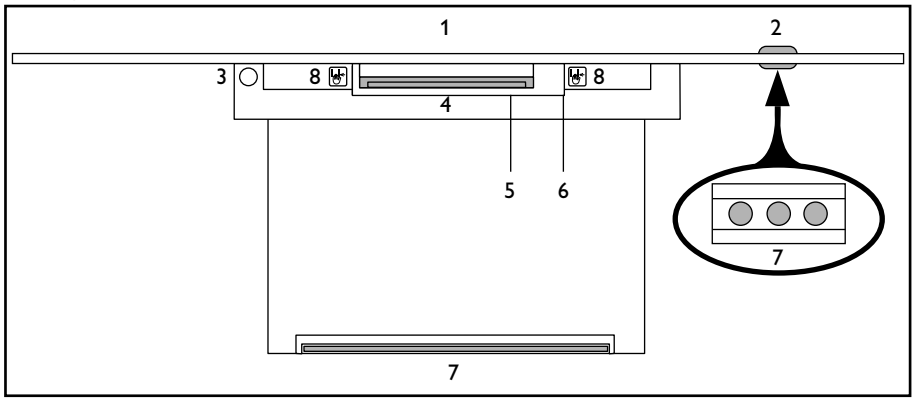
6.1 Legend



No.	Description
1	”Floating“ table top with rails for accessories
2	Handswitch (optional; attachment is possible at any point along the rails, even at the rear)
3	Disable footswitches. The lamp is lit when the function is selected.
4	Bucky (optional: servo suspended)
5	Brake for Bucky
6	Centre indicator (optional)
7	Potential bonding pin
8	– Enable longitudinal and transverse movement of the “floating” table top – Switch on light field indicator
9	Lower table top (motorised)
10	Raise table top (motorised) You can fold up the footswitches (e.g. to clean the floor).
11	Risk of trapping fingers

7 BuckyDiagnost TF

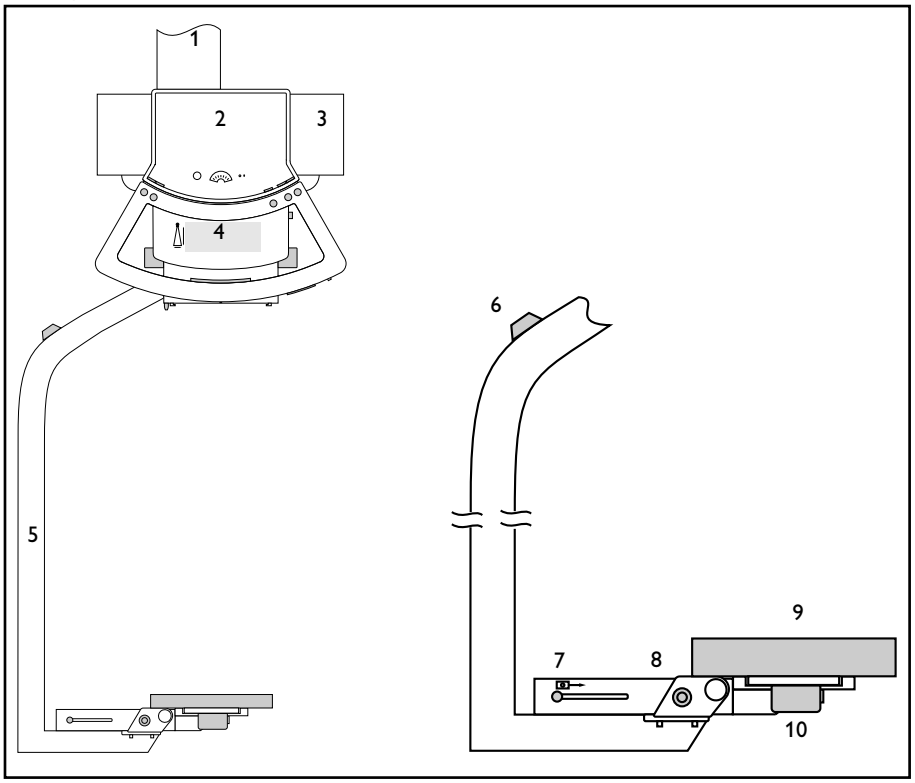
7.1 Legend



No.	Description
1	”Floating“ table top with rails for accessories
2	Handswitch (optional; attachment is possible at any point along the rails, even at the rear)
3	Disable footswitches. The lamp is lit when the function is selected.
4	Bucky (optional: servo suspended)
5	Brake for Bucky
6	Centre indicator (optional)
7	– Enable longitudinal and transverse movement of the ”floating“ table top – Switch on light field indicator
8	Risk of trapping fingers

8 BuckyDiagnost Trauma II

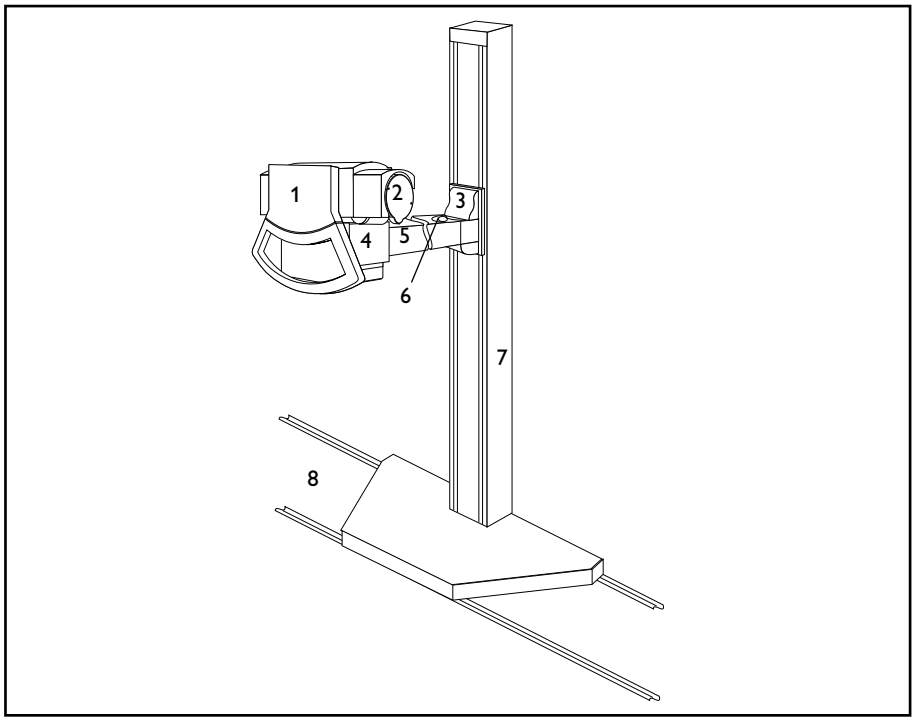
8.1 Legend



No.	Description
1	Ceiling suspension
2	Control grip
3	Tube assembly
4	Collimator
5	Carrier arm
6	Enable buttons for – moving the tube assembly longitudinally and – moving the tube assembly transversely and – raising/lowering the tube assembly
7	Move measuring chamber
8	Lock for cassette holder tilt
9	Cassette holder
10	Cassette holder locking lever

9 BuckyDiagnost FS

9.1 Legend

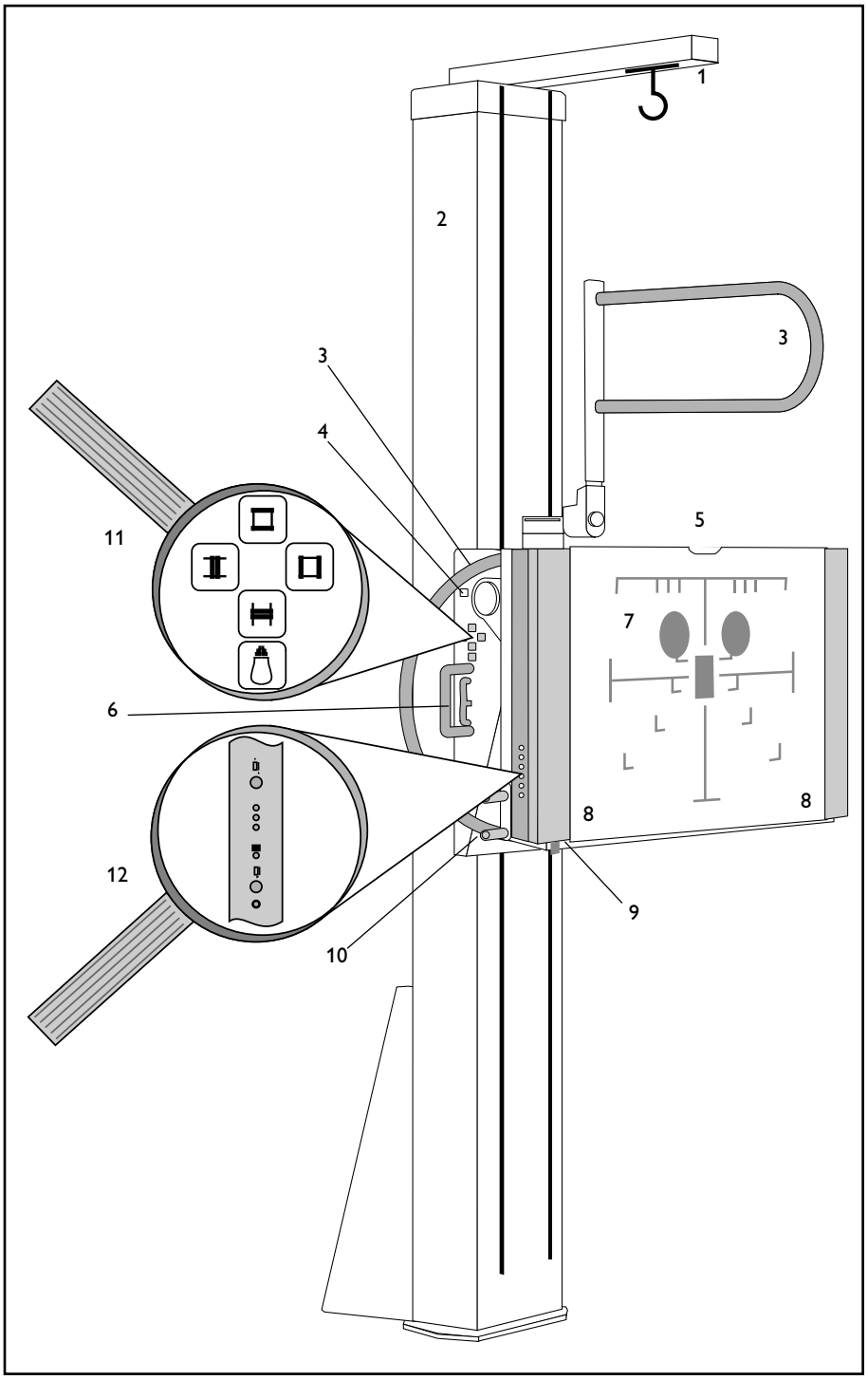


No.	Description
1	Control grip
2	Tube assembly
3	Vertical carriage
4	Collimator
5	Tube arm
6	Swivel joint
7	Stand
8	Floor rails

Philips Medical Systems 5 Nov. 2003

10 BuckyDiagnost VE/VT

10.1 Legend

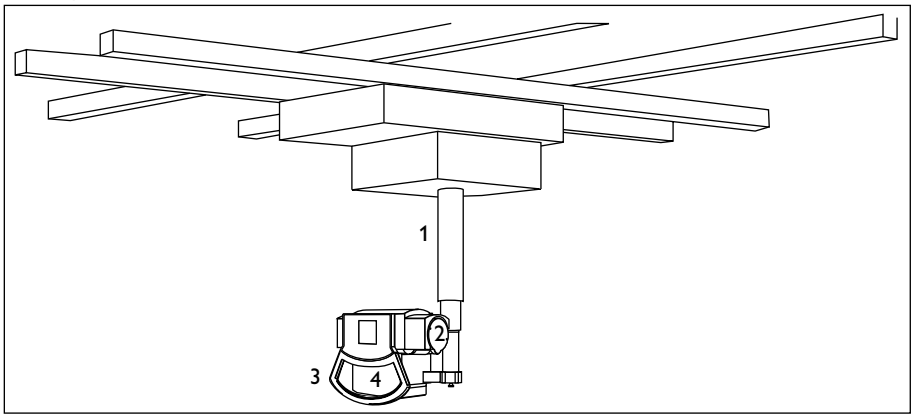


Philips Medical Systems

No.	Description
1	Baby holder suspension (optional accessory) maximum load: 10 kg
2	Column
3	Stretch grip for lateral exposures (option. accessory) maximum load: 25 kg Grips for P/A exposures (optional accessory)
4	Tilt angle indicator (VT)
5	Chin rest
6	Raise/lower Bucky unit
7	Position of the automatic exposure control measuring fields
8	Rails for accessories
9	Open front panel (with ACL4 only)
10	Tilt Bucky unit (VT) maximum load of horizontal Bucky unit: 25 kg
11	If tracking (optional accessory) is installed:  Open diaphragm vertically  Close diaphragm vertically  Open diaphragm horizontally  Close diaphragm horizontally  Switch light beam lamp on
12	Operation and display of ACL4 (see chapter 12)

11 BuckyDiagnost CS

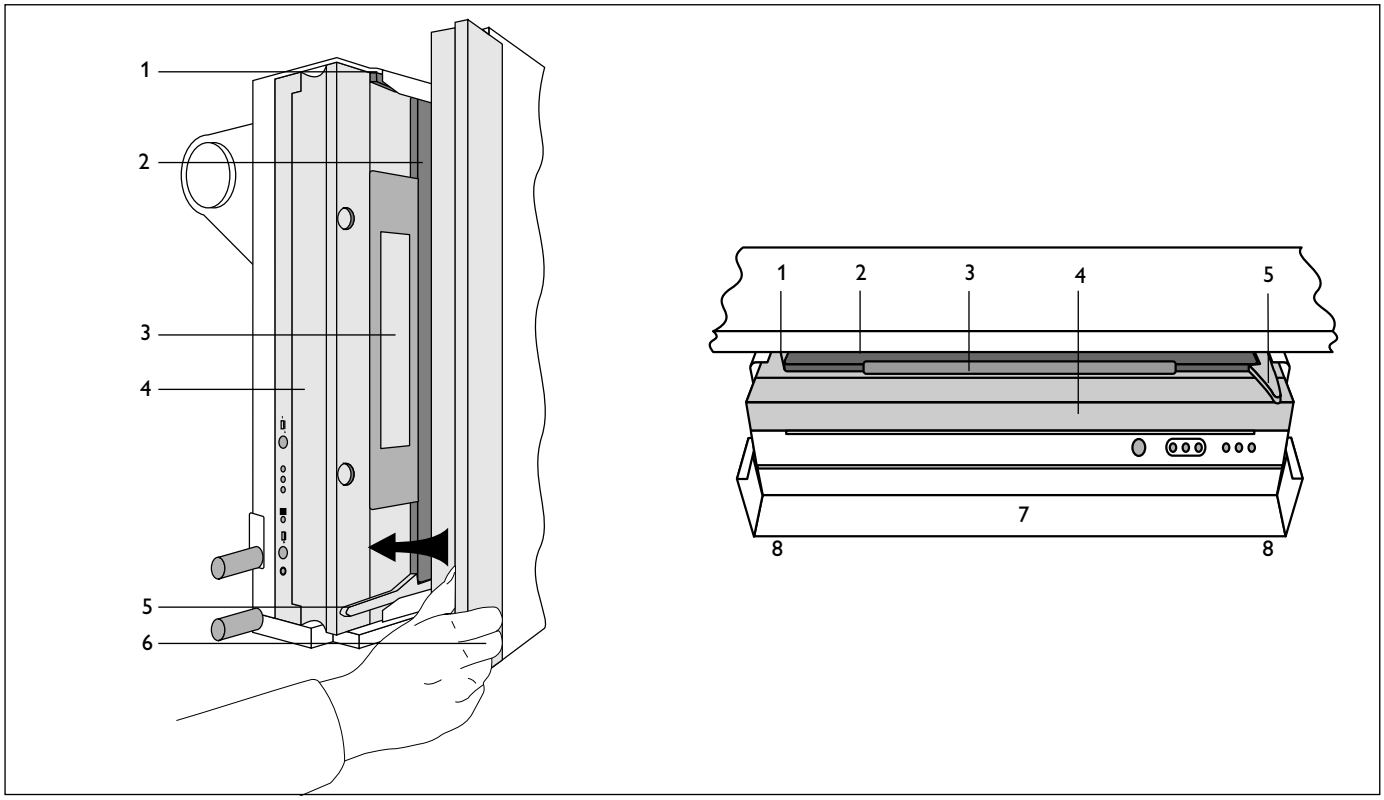
11.1 Legend



No.	Description
1	Ceiling suspension
2	Tube assembly
3	Control grip
4	Collimator

12 The cassette trays

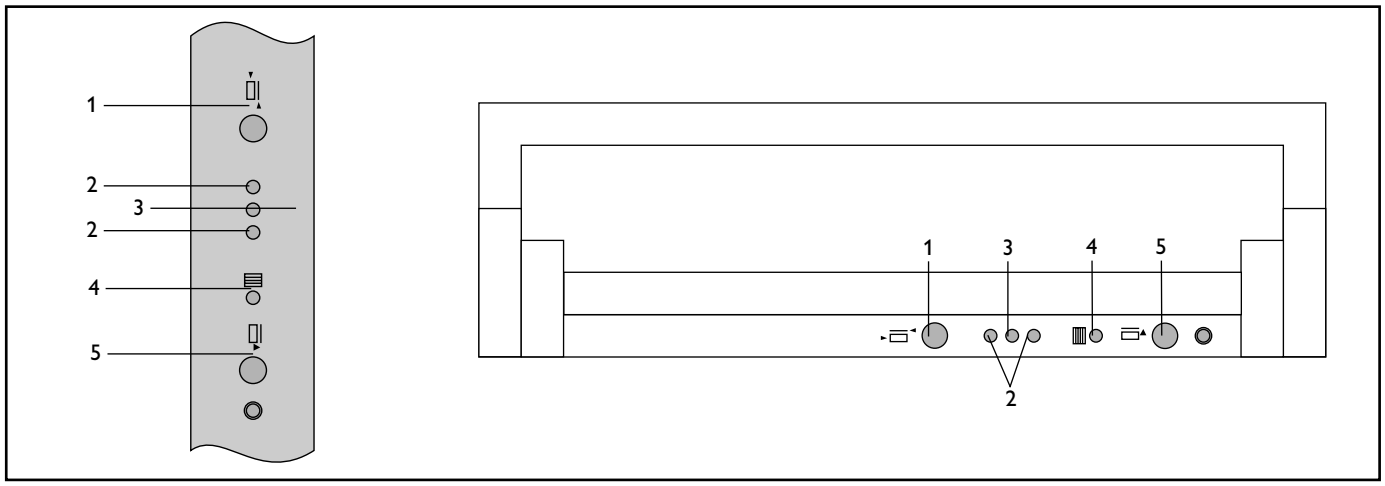
12.1 Automatic cassette tray ACL4



No.	Description
1	Grid insertion stop
2	Interchangeable grid
3	Grid grip with label and colour coding: Colour f_0 [cm] r Lp/cm red 110 12 36 blue 140 12 36 green 180 12 36 pink 110 8 36 yellow 140 8 36
4	Cassette carriage slit
5	Insertion aid and lever for unlocking the grid
6	Close front panel **only here** (BD.VE/VT)
7	Cover (BD.TH 2/TF)
8	Risk of trapping fingers

Philips Medical Systems 5 Nov. 2003

12.1.1 Operation and display of ACL4



No.	Description
1	Switch over cassette position Position the cassette centrally/off centre in the Bucky at the top. Select the cassette position with the cassette carriage moved out. If the cassette is already positioned, you can only move it once.
2	Yellow LED: Position cassette off centre. Depending on whether you have a left or right-handed version, one of the two LEDs lights up.
3	Green LED: Cassette is positioned. – LED flashes slowly: cassette is being transported – LED flashes quickly: positioning error; remove cassette and reinsert – LED lit: cassette is positioned
4	Green LED: Grid is fully inserted
5	Open or close cassette tray

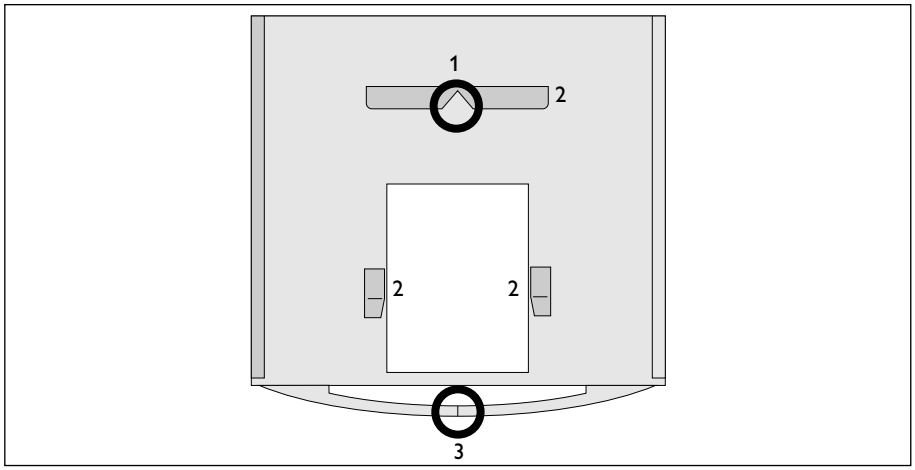
The reset function

The ACL4 continuously makes a self-test and – to avoid damages – stops automatically if an error is detected. So it can happen that you cannot remove an exposed cassette. In this case you can activate the ACL4 with ”reset“ and then – as described – remove the cassette.

If the cassette is blocked mechanically, ”reset“ is inactive; you must call the Service Organisation.

For ”reset“ press the buttons 1 und 5 at the same time.

12.2 Manual cassette tray



No.	Description
1	Mark for centering the cassette
2	Locking lever for cassette
3	Mark for centering the tube assembly opposite the cassette tray if cassette is inserted centrally

13 Appendix

13.1 If something doesn´t work …

What doesn't work?	What could be the cause?	What must you do?
Green READY lamp on the generator contol desk is not lit.	The tube assembly protection system of the generator is activated. You have pressed "Prepare for exposure" more than five times in a minute.	Wait a few minutes.
	The conditions for ready for exposure are only fulfilled partly.	Fulfill the conditions for ready for exposure. If you have the extended version: press "Test"; an error message will be displayed.
Green READY lamp on the generator contol desk and the green system lamp on the control grip is not lit.	The conditions for ready for exposure are only fulfilled partly.	Fulfill the conditions for ready for exposure. If you have the extended version: press "Test"; an error message will be displayed.
You cannot release an exposure although the green READY lamp on the generator control desk and the green system lamp on the control grip are both lit.	The grid is not clamped in place.	Pull cassette tray right out and insert it again.
	The inserted cassette has already been exposed.	Insert a new cassette
You can neither raise nor lower the table top. (not at BuckyDiagnost TF).	The footswitches are disabled.	Enable the footswitches again.
	The overload protection system is activated.	Wait about 20 minutes. Exposures are then possible.
You cannot move the table top.	The footswitches are disabled.	Enable the footswitches again.
The cassette is not loaded in the ACL 4.	The cassette is not inserted correctly.	Never use force. Remove cassette, wait for 5 s and insert again.
The cassette will not eject.	The control of the ACL4 has malfunctioned.	Use the Reset function of the ACL4 (see left page). If unsuccessful, call Customer Service.
	There is a mechanical fault.	

13.2 Messages

- Messages in conjunction with the telephone symbol are only for Customer Service (except for operation with key-operated switch). Please note down these messages for Customer Service.
- Messages according to BuckyDiagnost CS2/4 have not been changes in the control grip display. At the floor stand BuckyDiagnost FS the abbreviation ”CS“ means ”floor stand“ resp. ”tube assembly“.

Component	Message	Remarks
General	This aux. unit is not available	Chose another auxiliary
	Grid was not released	Error in the Bucky grid, reinsert cassette, if necessary call Customer Service
	Insert cassette	–
	Insert cassette again	–
	The cassette is already exposed	Insert unexposed cassette
	SID too small	Raise tube assembly
	No Bucky servo	Motorised drive of the image receptor carriage has failed, call Customer Service
	Insert cassette centric	–
Tracking	Servo active	–
	Wallstand tilted	Set cassette tray to 0° or 90°
	Tube not at 0°	Set central beam axis vertical
	Tube not at 90°	Set central beam axis horizontal
	SID too small	Measure SID again, zoom, if necessary
	CS at limit	The tracking range of movement is smaller than the manual range of movement; move column out of the boundary area.
	Servo stand by	Move tube assembly into the capture range
	Press button again to servo	Select auxiliary again
	Servo off	Select auxiliary
	No servo for this device	–
	Servo not ready please wait	–
	Servo active please wait	–
Tracking image receptor	Maybe collision with Bucky tray	Image receptor carriage is obstructed in continued running, remove obstruction
	Bucky is moving please wait	Wait until the end of the movement
	Move CS over Bucky tray	Move the tube assembly over the image receptor
	Grid exposure CS trans not locked	Move tube assembly to the image centre
	Press test for reference run	System is not ready for tracking image receptor Move tube assembly and image receptor to centre position
	Invalid cassette	Use a larger cassette size
	Tomo defect ☎	–
	Check field size	–

Component	Message	Remarks
Key-operated switch	Restricted use	Manual operation, call Customer Service
Wall Bucky	Cassette still in the table	Remove (second) cassette from the table
	Bucky unit not at fixed position	Locate table top horizontally or vertically
	Lock CS in long. direction	Movement in the fixed mounted rails
	Lock CS in trans. direction	Movement in the ceiling suspension unit
	No wall cassette	Insert cassette
	Move CS over WS	Move tube assembly centrally over the table top
Tomographic unit	No exp. release from generator	Release ready for exposure
	Exposure aborted at the generator	See Instructions for Use for the generator
	Press test for reference run	Demonstrate the tomographic movement to the patient
	Center floor stand in long. direction	Movement in the fixed mounted rails
	Center floor stand in trans. direction	Movement in the ceiling susp. unit
	Move tube ass. into SID	Movement in the telescopic tube
	Raise tube assembly	Movement in the telescopic tube
	Lower tube assembly	Movement in the telescopic tube
	Set tube assembly to 0°	Movement around the horizontal axis
	Lock CS arm hor. rotation	Turn the tube assembly round the stand so that its longitudinal axis points in the same direction as the longitudinal direction of the table
	Raise table top	–
	Lower table top	–
	Gen. preparation signalled	–
	CS long is still unlocked	Engage the floor stand in the longitudinal direction
	Preparation tomo please wait	–
	Tomo active in the other room	–
	Aux. unit changed at the generator	Wait until tomography is released During tomography the auxiliary has been changed at the generator control desk; repeat exposure
	Table top brakes released	During tomography the table top has been moved; repeat exposure
	Tomo run aborted at the generator	–
	Bucky drive is defect	Call Customer Service
Bucky table	Cassette still in the wall stand	Remove (second) cassette from the wall Bucky
Automatic Bucky tray	Insert grid	APR programme with grid selected
	Remove grid	APR programme without grid selected
	False APR set	APR record does not match Bucky, call Customer Service

Component	Message	Remarks
Combination tube assembly with AUX 5…8	Select aux. unit at the generator	Control grip operates AUXs 1 … 4
Manual operation with automatic format sensing	Measure SID man.	Use tape measure
Automatic format sensing/ NICOL	SID too small	The film size used is not illuminated
	Enlarge long. field size	Pair of diaphragms longitudinally closed
	Enlarge lat. field size	Pair of diaphragms laterally closed
	Limit coll-light use	Allow the light beam lamp to cool

PHILIPS

Let's make things better.